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THE LYSIANASSID AMPHIPOD CRUSTACEANS OF NEWFOUNDLAND, NOVA SCOTIA, AND NEW BRUNSWICK IN THE UNITED STATES NATIONAL MUSEUM

BY

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Since 1905, when S. J. Holmes published his paper on the Amphipoda of the New England coast, very little has been done with the amphipod fauna of the east coast of America. While examining the amphipod collections in the National Museum, the great bulk of which are unidentified, I have been impressed by the great number of species, many of which appear to be new.

During the early days of the United States Fish Commission (now the Bureau of Fisheries) valuable dredgings were made off Newfoundland and Nova Scotia which proved to be very rich in amphipods. This material forms the basis of the present series of papers upon the amphipod fauna of Newfoundland, Nova Scotia, and New Brunswick, of which the present, comprising the family Lysianassidae, is the first.

Among the species represented by this family are two which appear to be new to science, and these I have designated as *Orchomene depressa* and *Orchomene macroserrata.*

Family LYSIANASSIDAE

ACIDOSTOMA LATICORNE G. O. Sars

1879. *Acidostoma laticorne* G. O. Sars, Arch. Naturv. Kristian., vol. 4, p. 440.

1885–86. *A. laticorne* G. O. Sars, Norske Nordhavs-Exp., vol. 6, Crust. I, p. 152, pl. 13, fig. 3, 3*a*, male.

Station 2481 steamer *Albatross*, east of Nova Scotia, 44° 07′ 30″ N., 57° 16′ 45″ W., July 5, 1885, 116 fathoms, gravel; 1 specimen.

This female specimen measures about 8.5 mm. As this sex has not been figured, I have made drawings in order to show wherein it differs from the male. Stebbing says of the genus *Acidostoma*[1]

[1] Tierreich, Amph., vol. 1, p. 14.

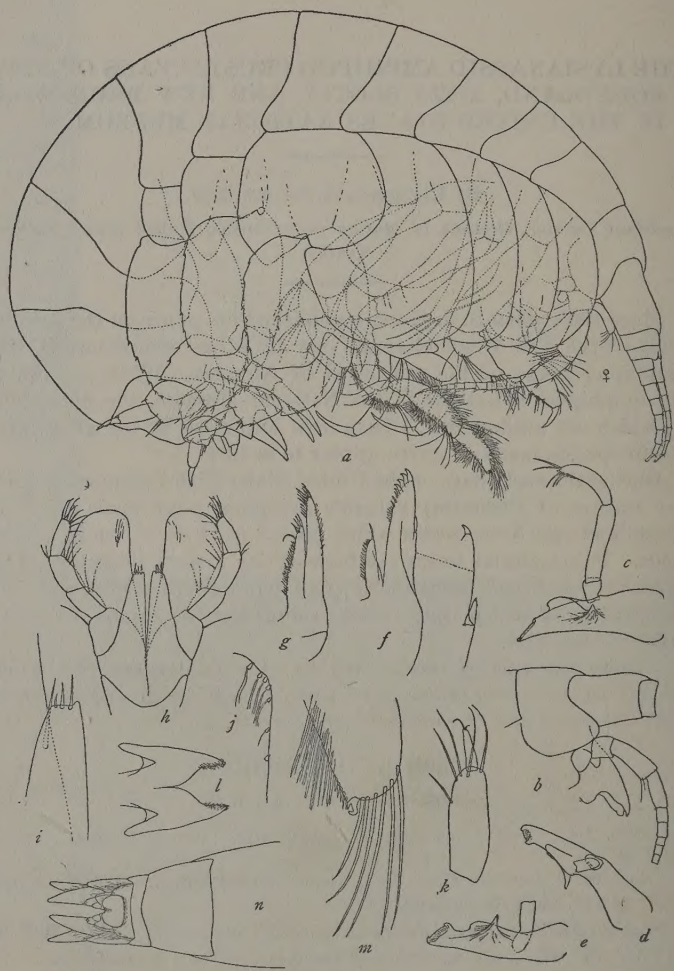

FIGURE 1.—ACIDOSTOMA LATICORNE. *a*, ENTIRE ANIMAL, FEMALE; *b*, HEAD AND EPISTOME; *c–e*, RIGHT MANDIBLE; *f*, MAXILLA 1; *g*, MAXILLA 2; *h*, MAXILLIPEDS; *i*, INNER PLATE OF MAXILLIPED, ENLARGED; *j*, OUTER PLATE OF MAXILLIPED, ENLARGED, SHOWING THE MINUTE TEETH; *k*, THIRD AND FOURTH JOINTS OF PALP OF MAXILLIPED, ENLARGED; *l*, LOWER LIP; *m*, END OF GNATHOPOD 2, ENLARGED, SHOWING UNGUIFORM SEVENTH JOINT; *n*, PLEON SEGMENTS 3–6, TELSON, AND UROPODS 2 AND 3

that the fourth joint of the palp of the maxillipeds is rudimentary, but in this female it is nearly half the length of the third joint and though rather small can scarcely be regarded as rudimentary. The outer plate of the maxillipeds is said to be without teeth, but in the present specimen there is a row of sparsely scattered very small weak teeth. Stebbing says the mandible possesses no molar, but in this specimen there is a prominent conical process which appears to represent the molar. As will be noticed, the palm of gnathopod 1 is defined by two long slender spines and is differentiated from the hind margin of the joint by a very low angle, and the palm throughout is armed with very fine, closely set teeth. Gnathopod 2 bears a very minute unguiform seventh joint.

ANONYX NUGAX (Phipps)

1774. *Cancer nugax* PHIPPS, Voyage North Pole, p. 192, pl. 12, fig. 2.

Grand Manan, U. S. Fish Commission, 1872; 1 speciman.

Grand Manan, between High Duck Island and Long Island, 8–9 fathoms, August 23, 1898, Mary J. Rathbun; 2 specimens.

Bay of Fundy, U. S. Fish Commission, 1872; 6 specimens.

Location 56–58 steamer *Speedwell*, Halifax harbor, off Herring Cove, between Mars Rock and Neverfail Shoal, August 25, 1877, 16 fathoms, sandy bottom; 1 specimen.

Location 59 steamer *Speedwell*, Halifax Outer Harbor one-fourth mile SSW. Rock Head buoy, August 28, 1877, 25 fathoms, gravel; 2 specimens.

Location 95 steamer *Speedwell*, Halifax Harbor, about one-fourth mile from shore off York Redoubt and Sandwich Point, September 13, 1877, 16 fathoms, very fine sand, ooze and red algae; 5 specimens.

Location 97 steamer *Speedwell*, Halifax Harbor, midway between York Redoubt and McNab's Island Light, September 13, 1877, 16 fathoms; 2 specimens.

Location 101 steamer *Speedwell*, off Halifax, Sambro Light, W. by N. one-fourth N. 9 miles, September 15, 1877, 42 fathoms, fine sand with Ophioglypha; 5 specimens.

Location 110 steamer *Speedwell*, Bedford Basin, September 21, 1877, 37 fathoms, fine sand and mud; 3 specimens.

Location 112–118 steamer *Speedwell*, Chebucto Head Light, NW. by W. about 8½ miles, September 24, 1877, 52 fathoms, fine sand and mud; 5 specimens.

Location 121 steamer *Speedwell*, Halifax Outer Harbor, September 27, 1877, 16 fathoms, sand, mud, and rocks; 1 specimen.

Station 2443 steamer *Albatross*, southeast of Newfoundland, 45° 44′ 00″ N., 49° 45′ 00″ W., June 25, 1885, 35 fathoms, white sand and broken shells; 2 specimens.

Station 2461 steamer *Albatross*, south of Newfoundland, 45° 47′ 00″ N., 54° 13′ 30″ W., July 3, 1885, 59 fathoms, fine sand and black specks; 1 specimen.

Station 2463 steamer *Albatross*, south of Newfoundland, 45° 44′ 00″ N. 54° 27′ 00″ W., July 3, 1885, 45 fathoms, broken shells; 3 specimens.

Station 2491 steamer *Albatross*, east of Nova Scotia, 45° 24′ 30″ N., 58° 35′ 15″ W., July 6, 1885, 59 fathoms, white sand; 1 specimen.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 23 specimens.

Station 2498 steamer *Albatross*, southeast of Nova Scotia, 44° 54′ 00″ N., 59° 46′ 45″ W., July 6, 1885, 65 fathoms, fine brown sand; 1 specimen.

Station 2499 steamer *Albatross*, southeast of Nova Scotia, 44° 46′ 30″ N., 59° 55′ 45″ W., July 6, 1885, 130 fathoms, black mud; 1 specimen.

ARISTIAS MICROPS G. O. Sars

1895. *Aristias microps* G. O. Sars, Crust. Norway, vol. 1, p. 675, pl. 1, fig. 2.

Station 2463 steamer *Albatross*, south of Newfoundland, 45° 44′ 00″ N., 54° 27′ 00″ W., July 3, 1885, 45 fathoms, broken shell; 1 specimen.

Sars gives 3 mm. for the length of this species; the present specimen, however, is 4.5 mm. *Aristias microps* has been recorded heretofore only from the west coast of Norway.

CHIRONESIMUS DEBRUYNII (Hoek)

1882. *Anonyx debruynii* Hoek, Niederl. Arch. Zool., suppl. 1, no. 7, p. 44, pl. 3, figs. 30–30*x*.

Bay of Fundy, U. S. Fish Commission, 1872; 1 specimen.

Station 2499 steamer *Albatross*, southeast of Nova Scotia, 44° 46′ 30″ N., 59° 55′ 45″ W., July 6, 1885, 130 fathoms, black mud; 1 specimen.

HIPPOMEDON PROPINQUUS G. O. Sars

1890. *Hippomedon propinquus* G. O. Sars, Crust. Norway, vol. 1, p. 57, pl. 21, fig. 1.

Bay of Fundy, U. S. Fish Commission, 1872; 4 specimens.

Location 56–58 steamer *Speedwell*, Halifax Harbor, off Herring Cove, between Mars Rock and Neverfail Shoal, August 25, 1877, 16 fathoms, sandy bottom; 5 specimens.

Location 72–73 steamer *Speedwell*, Halifax Harbor, Sandwich Point W. ½ N. ⅓ miles, September 4, 1877, 18 fathoms, fine sand; 1 specimen.

Location 95 steamer *Speedwell*, Halifax Harbor, about one-fourth mile from shore off York Redoubt and Sandwich Point, September 13, 1877, 16 fathoms, very fine sand, ooze, and red algae; 1 specimen.

Location 98 steamer *Speedwell*, Halifax Harbor, midway between Sandwich Point and McNab's Island Light, September 15, 1877, 18 fathoms, mud and fine sand; 5 specimens.

Location 101 steamer *Speedwell*, off Halifax, Sambro Light, W. by N. ¼ N. 9 miles, September 15, 1877, 42 fathoms, fine sand with Ophioglypha; 1 specimen.

Location 110 steamer *Speedwell*, Bedford Basin, September 21, 1877, 37 fathoms, fine sand and mud; 2 specimens.

Location 112–118 steamer *Speedwell*, Chebucto Head Light NW. by W. about 8½ miles, September 24, 1877, 52 fathoms, fine sand and mud; 3 specimens.

Station 2458 steamer *Albatross*, southeast of Newfoundland, 46° 48′ 30″ N., 52° 34′ 00″ W., July 2, 1885, 89 fathoms, sand, green mud; 5 specimens.

Station 2461 steamer *Albatross*, south of Newfoundland, 45° 47′ 00″ N., 54° 13′ 30″ W., July 3, 1885, 59 fathoms, fine sand and black specks; 2 specimens.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 10 specimens.

Station 2703 steamer *Albatross*, south of Nova Scotia, 44° 01′ 00″ N., 59° 02′ 30″ W., August 23, 1886, 140 fathoms, gray sand and black specks; 3 specimens.

HIPPOMEDON SERRATUS (Holmes)

1903. *Hippomedon serratus* HOLMES, American Nat., vol. 37, p. 278.
1905. *Hippomedon serratus* HOLMES, Bull. Bureau of Fisheries for 1904, vol. 24, p. 473, pl. 4, fig. 2, and text fig.

Grand Manan, August-September 1898, Mary J. Rathbun; 1 specimen.

ONISIMUS EDWARDSII (Kröyer)

1846. *Anonyx edwardsii* KRÖYER, Naturh. Tidsskr., ser. 2, vol. 2, pp. 1, 41.

Location 43–46 steamer *Speedwell*, SE. ½ S. from Cape Sable about 30 miles, August 21, 1877, 90 fathoms; 7 specimens.

Grand Bank, 1879 (19), Osburn; 1 specimen.

Station 2443 steamer *Albatross*, southeast of Newfoundland, 45° 44′ 00″ N., 49° 45′ 00″ W., June 25, 1885. 35 fathoms, white sand and broken shells; 4 specimens.

ONISIMUS NORMANI (Schneider)

1891 and 1895, *Onisimus normani* (Schneider in MS.) G. O. SARS, Crust. Norway, vol. 1, p. 106, pl. 36, fig. 2; p. 686.

Location 42–46 steamer *Speedwell*, SE. ½ S. from Cape Sable about 30 miles, August 21, 1877, 88 fathoms (in *Urticina*); 21 specimens.

ONISIMUS PLAUTUS (Kröyer)

1845. *Anonyx plautus* KRÖYER, Naturh. Tidsskr., ser. 2, vol. 1, p. 629.

Location 112–118 steamer *Speedwell*, Chebucto Head Light, NW. by W. about 8½ miles, September 24, 1877, 52 fathoms, fine sand and mud; 2 specimens.

Station 2458 steamer *Albatross*, southeast of Newfoundland, 46° 48′ 30″ N., 52° 34′ 00″ W., July 2, 1885, 89 fathoms, sand, green mud; 4 specimens.

Station 2461 steamer *Albatross*, south of Newfoundland, 45° 47′ 00″ N., 54° 13′ 30″ W., July 3, 1885, 59 fathoms, fine sand and black specks; 6 specimens.

Station 2491 steamer *Albatross*, east of Nova Scotia, 45° 24′ 30″ N., 58° 35′ 15″ W., July 6, 1885, 59 fathoms, white sand; 4 specimens.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 75 specimens.

Station 2499 steamer *Albatross*, east of Nova Scotia, 44° 46′ 30″ N., 59° 55′ 45″ W., July 6, 1885, 130 fathoms, black mud; 1 specimen.

OPISA ESCHRICHTII (Kröyer)

1842. *Opis eschrichtii* (Holböll in MS.) KRÖYER, Naturh. Tidsskr., vol. 4, p. 149.

Station 2491 steamer *Albatross*, east of Nova Scotia, 45° 24′ 30″ N., 58° 35′ 15″ W., July 6, 1885, 59 fathoms, white sand; 1 specimen.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 2 specimens.

ORCHOMENE DEPRESSA, new species

Description.—Female.—Head, lateral angles rather broadly rounding, eyes oval, slightly narrower above, light yellowish-brown. Antenna 1, flagellum with about seven joints, accessory flagellum with three or four joints. Epistome very low, not projecting beyond upper lip. Mandible, molar low but well developed, accessory process not very prominent and not far in front of molar, palp set far back of molar. Maxilla 1, inner plate with two setae, outer plate

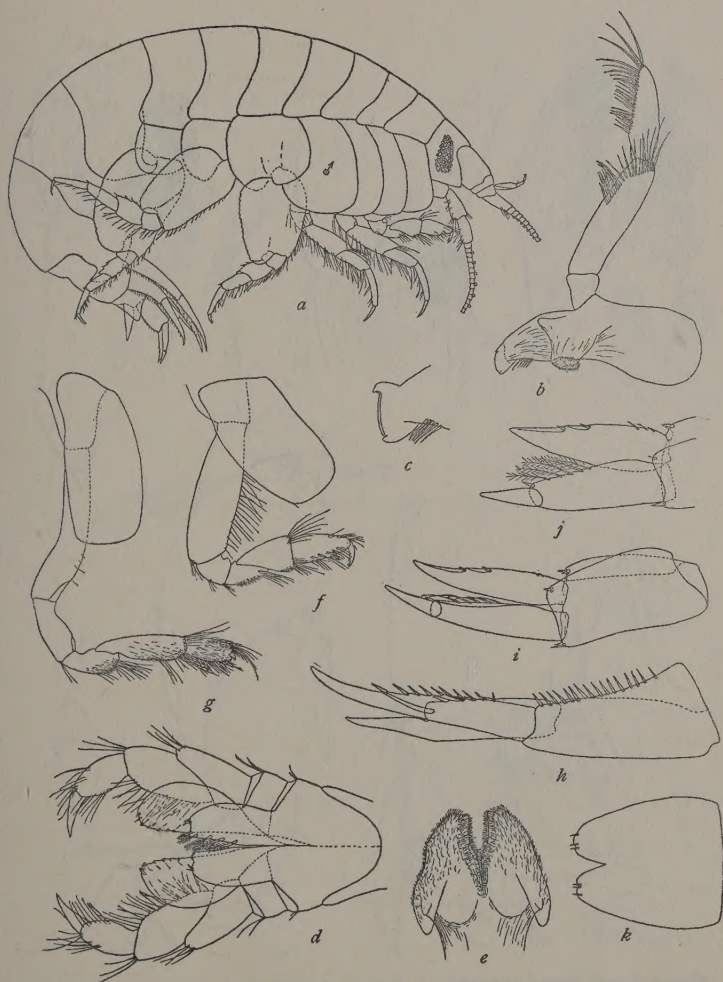

FIGURE 2.—ONISIMUS NORMANI. *a*, ENTIRE ANIMAL, MALE; *b*, RIGHT MANDIBLE; *c*, CUTTING EDGE OF RIGHT MANDIBLE, ENLARGED; *d*, MAXILLIPEDS; *e*, LOWER LIP; *f*, GNATHOPOD 1; *g*, GNATHOPOD 2; *h*, UROPOD 2; *i-j*, UROPOD 3; *k*, TELSON

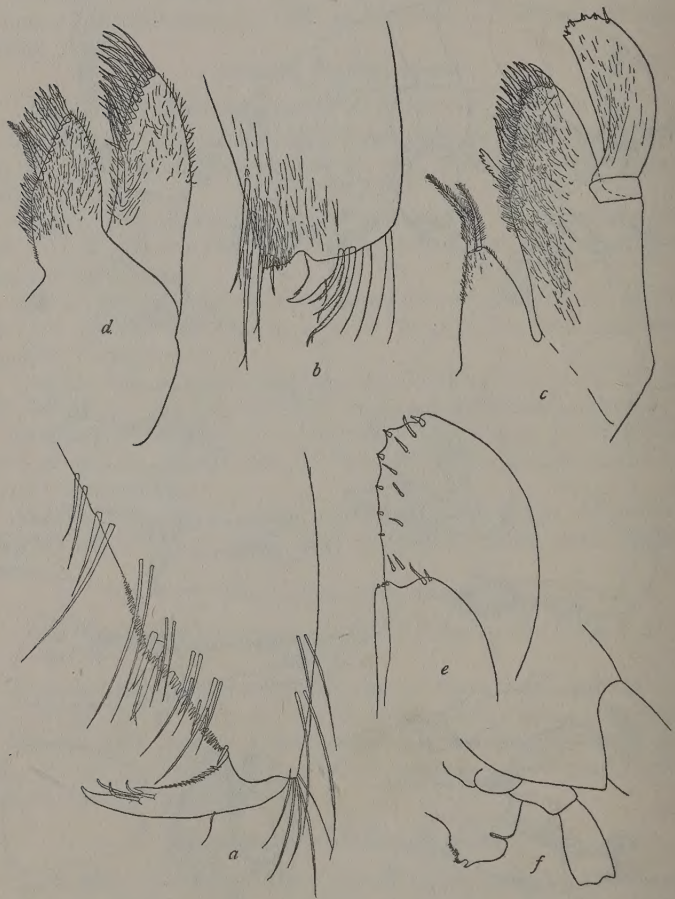

FIGURE 3.—ONISIMUS NORMANI. *a*, END OF GNATHOPOD 1, ENLARGED; *b*, END OF GNATHOPOD 2, ENLARGED; *c*, MAXILLA 1; *d*, MAXILLA 2; *e*, INNER AND OUTER PLATES OF MAXILLIPED, ENLARGED, SHOWING TEETH AND SPINES; *f*, HEAD AND EPISTOME

FIGURE 4.—ONISIMUS PLAUTUS. *a*, ENTIRE ANIMAL, MALE; *b*, HEAD AND EPISTOME; *c*, RIGHT MANDIBLE; *d*, CUTTING EDGE OF RIGHT MANDIBLE, ENLARGED; *e*, MAXILLA 1; *f*, MAXILLA 2; *g*, MAXILLIPEDS; *h*, LOWER LIP; *i*, GNATHOPOD 1; *j*, GNATHOPOD 2; *k*, PERAEOPOD 2; *l*, PERAEPOD 3; *m*, PERAEOPOD 4; *n*, PERAEOPOD 5; *o*, UROPOD 3; *p-q*, TELSON

FIGURE 5.—ONISIMUS PLAUTUS. *a*, HEAD; *b*, MAXILLA 1, ENLARGED, SHOWING END OF OUTER PLATE AND PALP; *c*, PALP OF MAXILLA 1; *d*, INNER AND OUTER PLATES OF MAXILLIPED, ENLARGED; *e*, END OF GNATHOPOD 1, ENLARGED; *f*, END OF GNATHOPOD 2, ENLARGED; *g*, END OF PERAEOPOD 2, ENLARGED

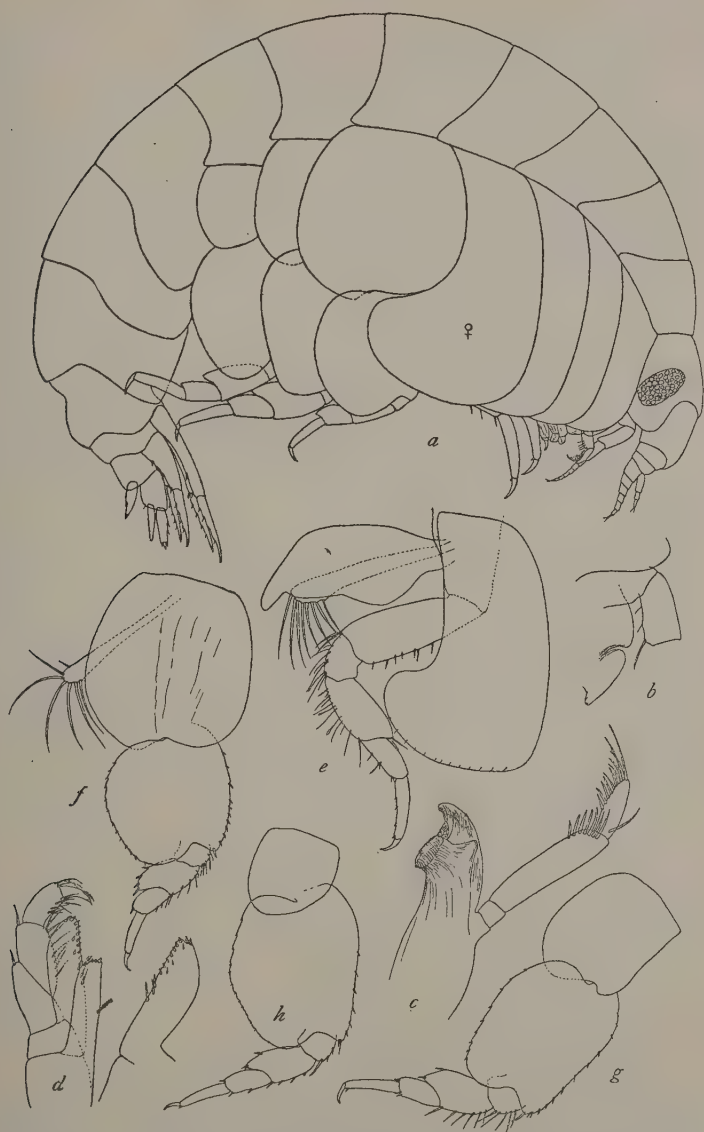

FIGURE 6.—ORCHOMENE DEPRESSA. *a*, ENTIRE ANIMAL, FEMALE; *b*, EPISTOME AND UPPER LIP; *c*, RIGHT MANDIBLE; *d*, MAXILLIPEDS; *e*, PERAEOPOD 2; *f*, PERAEOPOD 3; *g*, PERAEOPOD 4; *h*, PERAEOPOD 5

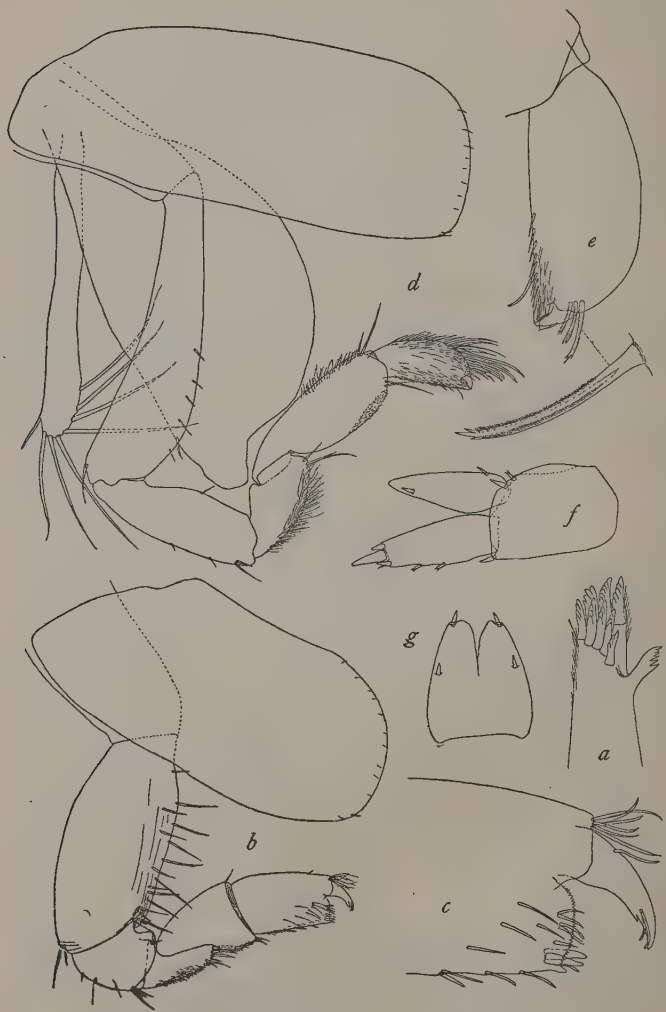

FIGURE 7.—ORCHOMENE DEPRESSA. *a*, END OF OUTER PLATE OF MAXILLA 1, ENLARGED; *b*, GNATHOPOD 1; *c*, END OF GNATHOPOD 1, ENLARGED; *d*, GNATHOPOD 2; *e*, END OF GNATHOPOD 2, ENLARGED; *f*, UROPOD 3; *g*, TELSON

with nine stout serrate spine-teeth, palp normal. Maxilla 2 normal. Maxillipeds, inner plate bearing three low teeth and a few spines on truncated end, outer plate narrow, reaching end of second joint of palp, bearing seven minute teeth on inner edge and two at the rounding apex, palp short, fourth joint bearing a minute nail with a seta on outer edge just beyond the center. First four side plates much deeper than their segments, first not expanded below and with lower anterior corner broadly rounding. Gnathopod 1, second joint rather stout, fifth and sixth subequal in length, fifth with lobe broad and very slightly produced, sixth slightly narrowing distally, palm transverse, defined by small tooth, slightly convex and finely dentate throughout, seventh joint stout, curved to fit palm and not overlapping. Gnathopod 2, sixth joint not quite two-thirds the length of fifth, palm slightly produced. Peraeopods 1 and 2 subequal in length and normal. Side plate 4 deeply excavate with posterior lobe broadly rounding. Peraeopod 3, side plate much deeper than second joint, which is broadly expanded, fourth joint broadly expanded. Peraeopod 4 longer than 3 or 5, side plate not as wide or as deep as second joint, which is not so greatly expanded as that of peraeopods 3 or 5, fourth joint not greatly expanded. Peraeopod 5, second joint much deeper than side plate and greatly expanded, fourth joint little expanded. Pleon segment 3 with postero-lateral margin slightly convex, postero-lateral angle very narrowly rounded but not produced. Pleon segment 4 with shallow sinus followed by a low, rounding, dorsal process. Uropod 1 projecting farther back than 2 or 3 which extend back equally. Uropod 3, outer ramus slightly longer than peduncle, inner ramus about as long as first joint of outer ramus and equaling it in width. Telson reaching back slightly beyond peduncle of uropod 3, divided nearly to center, lobes only slightly gaping, rounding apically, and each bearing a terminal spinule, a single spinule about the center of either lateral margin.

Length.—8 mm.

Type.—Cat. No. 62727, U.S.N.M., Bay of Fundy, taken by the U. S. Fish Commission in 1872. Two other specimens are in the lot from which the type was taken, and another lot of seven specimens bears the same locality label, Bay of Fundy, U. S. Fish Commission, 1872.

ORCHOMENE MACROSERRATA, new species

Description.—Female.—Head, lateral angles prominent with apices rather broadly rounding, eyes pear-shaped, black. Antenna 1 with four to nine joints in flagellum, accessory flagellum with four or five joints. Antenna 2, flagellum about as long as fourth and fifth joints

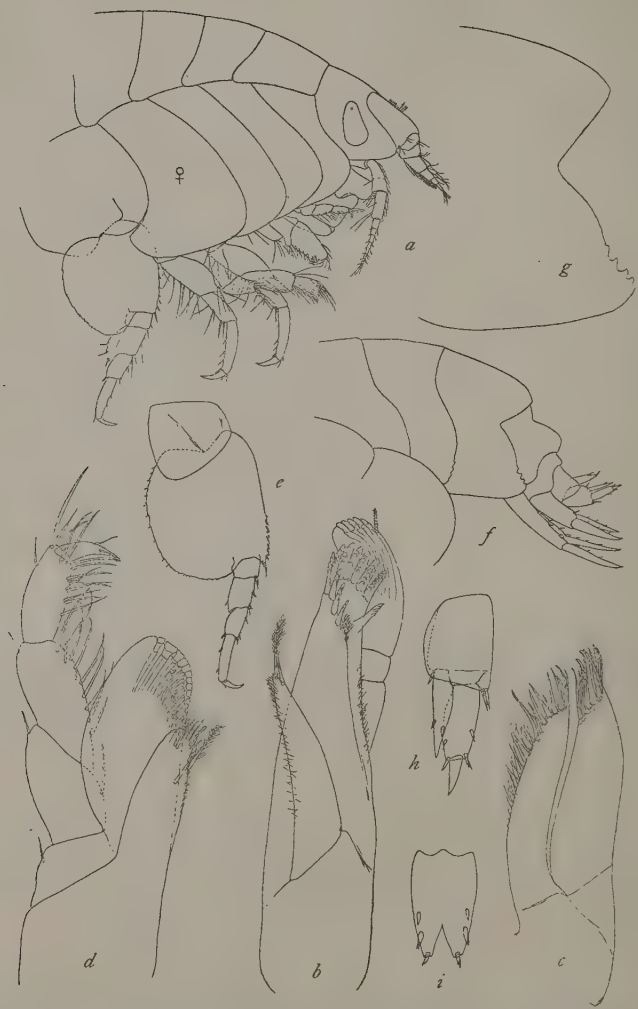

FIGURE 8.—ORCHOMENE MACROSERRATA. *a*, FRONT HALF OF ANIMAL, FEMALE; *b*, MAXILLA 1; *c*, MAXILLA 2; *d*, MAXILLIPED; *e*, PERAEOPOD 5; *f*, PLEON SEGMENTS 1–6, TELSON, AND UROPODS; *g*, PLEON SEGMENT 3, ENLARGED; *h*, UROPOD 3; MALE, TELSON

FIGURE 9.—ORCHOMENE MACROSERRATA. *a*, HEAD AND EPISTOME; *b*, RIGHT MANDIBLE; *c*, LOWER LIP; *d*, END OF GNATHOPOD 1, ENLARGED; *e*, END OF GNATHOPOD 2, ENLARGED

of peduncle together and composed of about seven joints. Epistome linguiform, projecting very prominently beyond the upper lip. Mandible about as shown by Sars for *O. batei*[2]. Maxilla 1, outer plate with 11 serrate spine-teeth. Maxilla 2, outer plate broader than inner. Maxilliped, inner plate reaching to end of first joint of palp and bearing three apical teeth, outer plate broad, reaching end of second joint of palp, armed on upper inner edge with a row of low flat teeth and on the under surface with four short spines and on the inner edge with two longer spines. Lower lip about normal, but outer edges somewhat constricted. Gnathopod 1, fifth joint shorter than sixth, lower margin produced into a narrow forward pointing lobe, sixth joint narrowing distally and about twice as long as its greatest width, palm slightly convex, crenulate, and defined by two stout spines, one on the outer and the other on the inner surface of the joint, dactyl slightly overlapping palm, bearing a single tooth on inner edge and several setae near apex. Gnathopod 2, fifth joint nearly twice as long as sixth, under broadly lobed surface bearing many short forward-pointing spinules or scales, sixth joint twice as long as wide, minutely produced, but not so strongly as is shown by Sars for *O. batei*. Peraeopods 1 and 2 normal. Peraeopod 3, second and fourth joints greatly expanded. Peraeopod 4 possibly slightly longer than 5, second joint not so much expanded as in peraeopod 3, fourth joint less expanded than in 3, but slightly more than in 5. Peraeopod 5 second joint more expanded than in 4. Pleon segment 3 with lower portion of postero-lateral margin bearing about four coarse teeth, second pleon segment bearing a few much shallower teeth. Pleon segment 4 bearing rounding dorsal process. Uropod 1 projecting backward slightly farther than 2 or 3, which project equally. Telson cleft about one-third of its length with lobes gaping.

Length.—Largest specimens measure about 8 mm.

Type.—Cat. No. 35774, U. S. N. M., Bay of Fundy, taken by the U. S. Fish Commission in 1872. Original number 552.

Other specimens in the Museum collection are as follows:

Bay of Fundy, U. S. Fish Commission, 1872. Original number 309, 3 specimens; original number 321, 4 specimens; original number 407, 4 specimens; original number 410, 1 specimen; original number 454, 8 specimens; original number 552, 2 specimens (Paratypes); no original number, 13 specimens.

All the specimens were taken by the U. S. Fish Commission in 1872 in the Bay of Fundy, in the vicinity of Grand Manan.

This species appears to be most closely related to *O. tschernyscheri* Brüggen from Jugor Strait, but in the present species the lobe of

[2] Sars, Crustacea of Norway, vol. 1, pl. 22, fig. *m*.

the fifth joint of gnathopod 1 is not so long, and the serrations on the postero-lateral margin of pleon segment 3 are much fewer in number and much coarser.

ORCHOMENELLA GROENLANDICA (Hansen)

1887. *Anonyx groenlandicus* HANSEN, Vid. Meddel. Naturh. Foren., Kjøbh., ser. 4, vol. 9, p. 72, pl. 2, fig. 5–5*g*.

Bay of Fundy, U. S. Fish Commission, 1872; 65 specimens.

Station 2699 steamer *Albatross*, south of Newfoundland, 45° 04′ 00″ N., 55° 23′ 00″ W., August 22, 1886, 72 fathoms, coral; 2 specimens.

ORCHOMENELLA MINUTA (Kröyer)

1846. *Anonyx minutus* KRÖYER, Naturh. Tidsskr., ser. 2, vol. 2, p. 23.

Bay of Fundy, U. S. Fish Commission, 1872; 1 specimen.

Location 101 steamer *Spedwell*, off Halifax, Sambro Light, W. by N. ¼ N. 9 miles, September 15, 1877, 42 fathoms, fine sand with *Ophioglypha;* 3 specimens.

Location 112–118 steamer *Speedwell*, Chebucto Head Light NW. by W. about 8½ miles, September 24, 1877, 52 fathoms, fine sand and mud; 10 specimens.

Grand Manan, August–September, 1898, Mary J. Rathbun; 1 specimen.

Station 2504 steamer *Albatross*, south of Nova Scotia, 44° 23′ 00″ N., 61° 22′ 45″ W., July 7, 1885, 82 fathoms, black mud and gravel; 2 specimens.

Station 2511 steamer *Albatross*, south of Nova Scotia, 44° 05′ 30″ N., 63° 31′ 30″ W., July 11, 1885, 84 fathoms, brown mud; 1 specimen.

Station 2463 steamer *Albatross*, southeast of Newfoundland, 45° 44′ 00″ N., 54° 27′ 00″ W., July 3, 1885, 45 fathoms, broken shell; 1 specimen.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 3 specimens.

ORCHOMENELLA PINGUIS (Boeck)

1861. *Anonyx pinguis* BOECK, Forh. Skandinav. Naturf., vol. 8, p. 642.

Bay of Fundy, U. S. Fish Commission, 1872; 20 specimens.

St. Johns, Newfoundland, June 29, 1885, steamer *Albatross*, low water; 3 specimens.

St. Andrews, New Brunswick (from lobster traps), taken by the Canadian Atlantic Biological Station; 10 specimens.

PARATRYPHOSITES ABYSSI (Goës)

1866. *Lysianassa abyssi* Goës, Öfv. Vet.-Akad. Forh., vol. 22, p. 519, pl. 37, fig. 5.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 1 specimen.

SOCARNES BIDENTICULATUS (Bate)

1858. *Lysianassa bidenticulatus* BATE, Ann. Mag. Nat. Hist., ser. 3, vol. 1, p. 362.

Station 2466 steamer *Albatross*, south of Newfoundland, 45° 29′ 00″ N., 55° 24′ 00″ W., July 3, 1885, 67 fathoms, coral; 4 specimens.

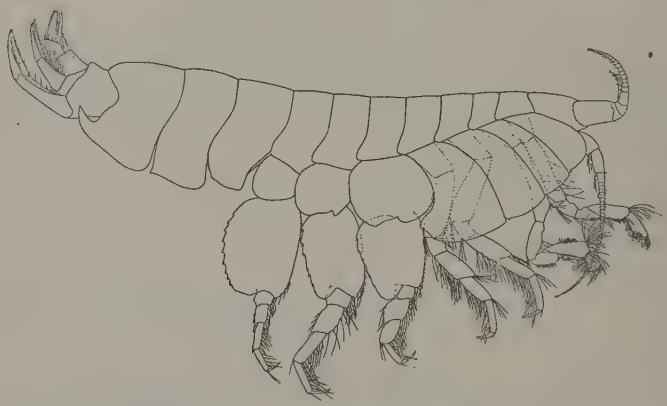

FIGURE 10.—PARATRYPHOSITES ABYSSI. ENTIRE ANIMAL, MALE

TMETONYX GULOSUS (Kröyer)

1845. *Anonyx gulosus* KRÖYER, Naturh. Tidsskr., ser. 2, vol. 1, p. 611.

Location 70 steamer *Speedwell*, about 120 miles south of Halifax, September 1, 1877, 190 fathoms, gravel and pebbles; 1 specimen.

Grand Bank, 1879 (19), Osburn; 2 specimens.

Station 2463 steamer *Albatross*, south of Newfoundland, 45° 44′ 00″ N., 54° 27′ 00″ W., July 3, 1885, 45 fathoms, broken shells; 1 specimen.

Station 2466 steamer *Albatross*, east of Nova Scotia, 45° 29′ 00″ N., 55° 24′ 00″ W., July 3, 1885, 67 fathoms, coral; 1 specimen.

Station 2485 steamer *Albatross*, east of Nova Scotia, 44° 24′ 00″ N., 57° 09′ 50″ W., July 5, 1885, 205 fathoms, fine white sand; 1 specimen.

Station 2491 steamer *Albatross*, east of Nova Scotia, 45° 24′ 30″ N., 58° 35′ 15″ W., July 6, 1885, 59 fathoms, white sand; 2 specimens.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 2 specimens.

Station 2703 steamer *Albatross*, south of Nova Scotia, 44° 01′ 00″ N., 59° 02′ 30″ W., August 23, 1886, 140 fathoms, gray sand and black specks; 1 specimen.

TMETONYX NOBILIS (Stimpson)

1853. *Anonyx nobilis* STIMPSON, Smithsonian Contrib., vol. 6, no. 5, p. 50.
1918. *Tmetonyx quadratus* KUNKEL, State of Connecticut Geol. and Nat. Hist. Survey, Bull. 26, p. 55, fig. 6.

Bay of Fundy, U. S. Fish Commission, 1872; 35 specimens.

Grand Manan, Long Beach, August 16, 1898, Mary J. Rathbun; 9 specimens.

St. Andrews, New Brunswick, in clean sand at half tide level just below surface on slope to Greenaway Island, on side farthest from Canadian Atlantic Biological Station, July 2, 1923; 2 specimens.

On July 23, 1928, James O. Maloney took a fine specimen near the mouth of the Matamek River, north shore of the Gulf of St. Lawrence.

TRYPHOSA COMPRESSA G. O. Sars

1891 and 1895. *Tryphosa compressa* G. O. SARS, Crust. Norway, vol. 1, p. 76; p. 685, pl. 4, fig. 2.

Banquereau, U. S. Fish Commission, September 13, 1878; 1 specimen.

Off Nova Scotia, steamer *Albatross*, July, 1885; 1 specimen.

URISTES UMBONATUS (G. O. Sars)

1882. *Ichnopus umbonatus* G. O. SARS, Forh. Vid. Selsk., Christiania, no. 18, p. 79, pl. 3, fig. 2.

Station 2484 steamer *Albatross*, east of Nova Scotia, 44° 20′ 00″ N., 57° 11′ 15″ W., July 5, 1885, 204 fathoms, fine white sand; 2 specimens.

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